COMMENTARIES

Beyond the Didactic Classroom: Educational Models to Encourage Active Student Involvement in Learning

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In a chiropractic college that utilizes a hybrid curriculum model composed of adult-based learning strategies along with traditional lecture-based course delivery, a literature search for educational delivery methods that would integrate the affective domain and the cognitive domain of learning provided some insights into the use of problem-based learning (PBL), experiential learning theory (ELT), and the emerging use of appreciative inquiry (AI) to enhance the learning experience. The purpose of this literature review is to provide a brief overview of key components of PBL, ELT, and AI in educational methodology and to discuss how these might be used within the chiropractic curriculum to supplement traditional didactic lecture courses. A growing body of literature describes the use of PBL and ELT in educational settings across many disciplines, both at the undergraduate and graduate levels. The use of appreciative inquiry as an instructional methodology presents a new area for exploration and study in the academic environment. Educational research in the chiropractic classroom incorporating ELT and appreciative inquiry might provide some valuable insights for future curriculum development. (J Chiropr Educ 2008;22(1):23–28)

Key Indexing Terms: chiropractic; education; learning; thinking

INTRODUCTION

The quest in educational circles for a curriculum delivery method that maximizes student learning and application of learned concepts is an ongoing process. In a chiropractic college with a newly designed hybrid curriculum using adult-based learning that integrates traditional lecture-based learning and problem-based learning methods, the analysis of educational results and fine-tuning of delivery methods continue to evolve in the pursuit to maximize student application of knowledge. It is important that the college produces doctors of chiropractic who are equipped with scientific and technical knowledge, critical thinking skills, and communication skills essential in clinical practice, but also that, through the course of their educational experience, the graduates become lifelong learners who are able to meet the changing health care needs of society.

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METHODS

Several health science, educational, and general databases were searched for citations on adult-based learning. Databases included MANTIS, AltHealthWatch, AMED, CINAHL, ERIC, Professional Development Collection, Academic Search Premier, MasterFILE Premier, and EBSCOhost. MANTIS (Manual, Alternative, and Natural Therapy) covers complementary and alternative health care disciplines with the ability to specifically search the chiropractic discipline. AltHealthWatch contains libraries of full text articles, peer-reviewed journals, reports, books excerpts, and original research for complementary and alternative medicine. CINAHL is a database of journals for the field of nursing

and allied health professionals. AMED (Alternative Medicine) is a database mainly of European journals. ERIC (Educational Resource Information Center) is a database of educational journals. Professional Development Collection is a large collection of education journals and peer-reviewed titles. Academic Search Premier is a general database of journals and peer-reviewed titles. MasterFILE Premier is a multidisciplinary database encompassing general reference publications and reference books. EBSCOhost provides the ability to perform online searches of research databases for many disciplines.

Search terms and phrases included "adult-based learning," "experiential learning," "active learning," and "appreciative inquiry." This broad search produced thousands of results, with the phrase "experiential learning" producing the highest number of citations and "appreciative inquiry" producing the fewest results. The literature search for these phrases was further refined with the additional criteria of "classroom," "education," "graduate education," and "chiropractic" using Boolean operators. These searches produced significantly narrower results when searching the health science and complementary and alternative medicine databases, as compared with the educational databases. Citations for "appreciative inquiry" combined with the terms "classroom" or "education" once again produced the fewest results in any database. Most notably, a minimal number of citations were obtained when the search parameters were narrowed to include the term "chiropractic" with each phrase, or when limiting the discipline being searched to the chiropractic field. Citations were selected based on review for educational methodology for under- and postgraduate education.

DISCUSSION

Lecture-Based Learning and Adult-Based Learning

The traditional lecture-based learning (LBL) model is a teacher-centered pedagogical approach in which learning is derived from the instructor, in a lecture setting, imparting what is known about a subject and, thus, hopefully resulting in knowledge transfer. The point of focus in a LBL model is on the instructor and the content being imparted. This method of teaching promotes superficial learning and utilizes assessment methods that reward student reproduction of facts. The traditional LBL format often results in students memorizing the material for the purpose of passing an objective examination. A growing amount of research indicates that this traditional approach does not appear to be an efficient method for the learner to effectively apply and integrate knowledge in a problem-solving situation.[1] Lecture-based instruction appears to be limited in developing retention of learned concepts and, more importantly, application of the knowledge in a clinical setting that requires critical thinking.

An adult-based learning (ABL) model employs educational strategies that meet the needs of the adult learner. There are several principles of adult learning theory, as proposed by Knowles.[2] First, ABL includes a learning environment that fosters mutual helpfulness and freedom of expression. ABL also increases student commitment to the learning process through involvement in planning and active participation in the learning experience and builds on prior experiences and knowledge. ABL provides an immediate opportunity to apply the learned concepts or skills.

Problem-Based Learning

The use of problem-based learning (PBL) methods in medical education has been increasingly employed since the origin of its model at McMaster University in Canada.[3] The McMaster model incorporates collaborative PBL in small groups that are student-centered rather than teacher-centered. With a PBL approach, students explore key issues in a problem through group discussion and exploration. Learners take the initiative to diagnose the problem, identify appropriate resources, perform relevant research, and formulate explanations or appropriate courses of action. Members in a small learning group discuss and explore individual knowledge and research findings to arrive at a group solution or course of action. A PBL model promotes an active and engaged process of learning. The small group discussions and exploration of the problem draw on the experiences and knowledge of each person in the group, which facilitates transfer and retention of knowledge. In a small group PBL environment, the instructor serves as a facilitator, guiding students through the process of inquiry and discovery, rather than as the content expert imparting knowledge. Problem-based learning satisfies many of the key principles of adult learning and fosters development of lifelong learning. An expanding number of educational settings and disciplines are employing PBL in the curriculum as a

method to meet the needs of the adult learner.[4] As PBL has gained popularity, many strategies have emerged.

Experiential Learning Theory

Experiential learning theory (ELT) as a model for learning was introduced by Kolb[5] in the early 1970s and embraces theories of learning and development earlier postulated by John Dewey, Kurt Lewin, Carl Jung, Carl Rogers, and other scholars exploring the learning process. ELT takes adult learning a step further with a multilinear model that is learner-centered rather than instructor-centered. Kolb defines ELT as, "... the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience."[5] ELT, as a learner-centered model, differs from the traditional teacher-centered LBL model in that it is an active, participatory, constructive method of learning versus a method by which learning is achieved through the transmission of existing knowledge from a content expert. Key propositions of ELT include the view of learning as a process rather than a focus on outcomes, with an emphasis on the experience as the learning method, with knowledge being gained from assimilating the experience.

Kolb's multifaceted four-stage learning cycle model employs the concepts of concrete experience, abstract conceptualization, reflective observation, and active experimentation as learning styles, or modes, used by the learner to grasp and transform experience into knowledge.[5] The process of learning is portrayed as a cycle in which the student gains and transforms knowledge through experiencing, reflecting, thinking, and acting. It is an exploratory method of learning as the student gains and distills knowledge, identifies concepts or actions that can be taken, and actively explores and tests these new concepts or actions. ELT provides a platform of multidimensional interaction that is especially useful in adult education. Much like PBL, it satisfies several key principles of adult learning, such as learning that is based on and builds on experience, is participatory in nature, and incorporates cycles of action and reflection.

Appreciative Inquiry

Appreciative inquiry (AI) is a management change process that has been used by organizations in various industries to achieve positive changes in business outcomes for over 20 years. Its roots stem from organizational development research and assessments to determine what was wrong within an organization and to identify changes for improvement. In the 1980s, Cooperrider, while performing an organizational development assessment, discovered an approach to organizational change that focuses on identifying the positive images and actions within an organization, inquiring about the ideal for optimum performance, and designing the strategies to achieve the desired changes.[6] AI methodology utilizes a collaborative and participative group dialogue to identify what worked well in the past through inquiry and discovery. Group members are then guided through a process of building on these past successes, or moments of excellence, to create a desired future. The AI process employs four phases known as discovery, dream, design, and destiny, which are commonly described as the 4-D cycle.[7]

AI as a teaching methodology is relatively new in educational settings. Educators and administrators are beginning to realize the potential of AI as a tool for growing a learning culture, both among the institution's faculty and staff and within the classroom.[8,9] In most educational settings, the classroom is not equivalent to the structure of business organizational teams that work or learn together over an extended period of time. Groups, or teams, within a classroom are more short term. Given this short-term nature of most educational settings, educators are beginning to adapt the application of AI principles to better suit the classroom environment in order to achieve enhanced learning outcomes. One adaptation, termed appreciative pedagogy, has been used in both undergraduate and organizational behavior classes as a model to heighten the students' learning experience.[10]

As an approach to learning, AI, or pedagogy, suggests that the use of group dialogue with an appreciative, or positive, focus on examining and exploring moments of excellence and then identifying opportunities for further improvement enables collective learning that evolves from experience and builds on the creative, positive energy generated by the information exchange. Numerous research studies have shown the relationship between positive communication and thought with an increased ability to solve problems creatively, make more effective decisions, improve optimism, and develop an increased learning capacity.[11] AI is a learner-centered approach to education wherein the

instructor serves as a facilitator rather than content expert. The instructor guides the small group through the 4-D cycle. A key component of AI is in the types of questions that are asked during the inquiry, or discovery phase. The questions are crafted with a positive focus designed to look for and strengthen the positive potential. As a facilitator, the instructor plays a key role in helping the small group maintain this positive focus. The diverse ages and backgrounds in an adult learning classroom provide a broad spectrum which stimulates creativity in peer feedback to further enhance collective learning. AI, as a teaching method, also satisfies many of the same needs of the adult learner as PBL or ELT. It is highly participatory in nature and encourages active involvement in learning with a positive focus that encourages mutual trust and respect.

Comments

The research studies on learner-centered approaches in education reviewed in the literature indicate that the learner-centered approach of the PBL, ELT, and AI methodologies meets the needs of adult learners, results in deeper understanding and application of the learned concepts, and creates a more rewarding and energizing learning environment.[1,3,10] One of the objectives of higher education is to prepare students for real-life situations by developing critical thinking skills during the educational process.[12] At both the under- and postgraduate levels, critical thinking skills are being employed in the curriculum for allopathic health care professionals.[13–15] One method of teaching critical thinking is through a systematic literature review.[16] Other methods to develop critical thinking include small group collaborative learning through inquiry and problem solving. [17,18] Assignments that incorporate a critical thinking component may be a useful strategy to cultivate reasoning skills. The learner-centered approaches of PBL, ELT, and AI all support development of critical thinking skills through active involvement during group dialogue and exploration.

An experiential learning activity allows students to apply learned knowledge and test this knowledge in action through performing the experience and then reflecting on the results of the experience.[19] The use of experiential learning enables learning by reaching students through their learning styles and also incorporates their individual history and base of knowledge. An example of how an experiential learning activity might be used in the traditional classroom would be to assign students a simulated patient case to research, determine a case management plan, and deliver a patient report of findings in a mock theatrical setting. This would incorporate Kolb's four-stage learning cycle model through the concrete experience of delivering the report of findings, which then sets the stage for active experimentation. The opportunity for individual reflective observation of the delivery could be accomplished with a student self-assessment. Peer and instructor feedback employing an AI approach immediately following the report of findings delivery in the classroom setting provides conversational space for group dialogue and team learning with positive reinforcement. This process might then set the stage for the student to further use abstract conceptualization to solidify the learned concepts and apply the skill in a clinical setting.[20]

AI develops a positive image that cements for each student those things that have already been mastered, or nearly mastered, and provides optimism, resulting in increased learning capacity.[8] The same concept of positive reinforcement applicable in the athletic realm applies in classroom education. AI focuses students on building a positive visual and mental picture of the experience and gives examples of what thoughts to have in their mind during the delivery. Visualizing moments of excellence from prior experiences provides a foundation on which to build future peak performances. Positive experience in the delivery of a project that utilizes diverse learning methodologies reinforces critical thinking by that same individual in other circumstances.[21] Future success builds on moments of excellence in past experiences.

Some of the literature reviewed discusses an element of fun as students actively participate in a creative expression of learned knowledge. Exploration of the role of emotion and imagination in an adult learning model suggests that learning activities that engage the affective domain influence transformation of learning.[22] Students are more open to the learning environment and creatively draw on their diverse background of experiences when participating in a fun learning activity in a safe environment. The previous example of a mock theatrical theme for the report of findings case assignment might be one method of solidifying learned concepts for future application.[23] A method that allows students to move from exposure to applied knowledge through learning activities, wherein the student's learning experience integrates research on a given topic, and preparation and

delivery of a product provides a more comprehensive understanding and transformation to the application of knowledge and skill.

CONCLUSION

As PBL has gained popularity, many variations and forms have evolved from the original McMaster model. The variety of instructional designs in use that employ a form of problem-based learning makes it difficult to directly contrast and compare the effectiveness of one model to another.[4] Additionally, there is a scarcity of research with the objective of directly correlating study findings with specific educational methods when a hybrid model employing multiple teaching strategies is used in the classroom. In a hybrid model, it would be difficult to ascertain which of the learner-centered approaches contribute to outcomes achieved.

An emerging trend in education is the use of AI as an innovative teaching strategy. However, there is very limited research on the use of appreciative inquiry or appreciative pedagogy in the classroom.[24] This search of several databases did not reveal many research studies with objective measurements on the use of AI as a teaching pedagogy in the classroom. There is, however, an emerging trend on its use in education and documentation of positive outcomes enhancing the learning experience.[10]

A chiropractic college in which a group of students moves through the curriculum throughout their education as an intact class presents the opportunity to employ a pedagogical model that includes small group, collaborative learning and draws on the variety of experiences to enhance and cultivate the learning process. The chiropractic college classroom offers a unique advantage, as compared with typical classrooms in higher education, to employ AI principles because students in a chiropractic classroom are together as group for a longer period of time, which would facilitate fostering a positive, supportive, and energized learning community. The chiropractic classroom provides a unique opportunity not found in many other undergraduate or graduate-level programs to create a learning environment in which the positive use of AI or appreciative pedagogy can be employed.

This commentary illustrates some of the advantages of an ABL educational delivery method that employs experiential learning to effectively prepare students as primary contact health care professionals. Educational strategies using a learner-centered approach coupled with an appreciative view should serve to promote the development of a lifelong learner equipped to meet patient health care needs.

Scholarly research in the chiropractic classroom comparing ABL with LBL on the same or similar topics would provide beneficial information for enhancing educational programs in the chiropractic curriculum. An interesting research design might measure the same course topic employing a single instructional pedagogy (LBL, ELT, PBL, or AI) in an attempt to isolate the factors that contribute to learning outcomes for each teaching strategy.

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